

**Method for Evaluating Running Safety of Railway Vehicles during Earthquake Using
Extensive Characteristics of Seismic Track Vibrations**

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This paper proposes a method for evaluating the running safety of a railway vehicle during an earthquake taking into account the characteristics of seismic waveforms and structures. Firstly, the characteristics of seismic track vibration taking into account both earthquakes and structures are derived from the measured data of past earthquakes and a wide range of structural natural periods. Secondly, the running safety index for seismic wave is calculated from the characteristics of the seismic track vibration and the running safety limit diagram for sinusoidal excitation. It is confirmed that the running safety index has a roughly linear relationship with the estimated derailment occurrence probability during earthquakes using the method described in a previous paper.